REMARKS

Claims 7-9, 11, 13, 15, and 20-31 are presented for prosecution. Claims 24-31 are new. Claim 11 is amended. Claims 1-6, 10, 12, 14, 16-19 are cancelled.

Claim 11 was rejected under 35 U.S.C. §101 as appearing to be drawn to a non-tangible, software arrangement per se. Applicants had previously pointed out that claim 11 recites "A document categorizing *apparatus*", and thus does recite a tangible device, i.e. an apparatus. Nonetheless, to remove any unintended ambiguity, claim 11 has been amended to recite, "A document categorizing apparatus for categorizing a plurality of <u>electronic</u> documents". This should make it clear that not only is the apparatus tangible, but also places structural restriction on the apparatus since it is specified for use with electronic documents. If the Examiner should still consider the recited "apparatus" to be intangible, Applicants invite the Examiner to suggest alternative wording for removing any unintended ambiguity.

Claims 7-9, 11, 13, 15, and 20-23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Zamir in view of Wu (U.S. Patent No. 5,991,756). The Office Action concedes that Zamir fails to teach that his cluster names are displayed in a first listing format when their degree of similarity is higher than a first predetermined value but lower than a second predetermined value, and that his cluster names are displayed in a second listing format when their degree of similarity is greater than the second predetermined value. However, the Office Action notes that, "Wu teaches in Fig. 5 the display of a Yahoo search result that might result from submitting the query string 'The game of go' to their search engine. Listed are a series of category names (cluster names) listed in a hierarchical format, which are links to groups of similar documents (clusters)." The Office Action then adds that, "one could also display such a structure through the use of a dendogram or tree (in the case of a vertical display, similar to Zamir, Fig. 2). Though not specifically taught by Wu, it would have been obvious to one of ordinary skill in the art at the time of invention to conclude that such a portrayal of document cluster names as seen in Figure 5 constitutes the claimed first and second listing formats based on interpretation of similarity measures (Col. 8, lines 46-56). It would have been obvious to one of ordinary skill

in the art at the time of invention to combine the teachings of Zamir and Wu as both inventions relate to grouping documents based on their similarities."

Applicants respectfully disagree. While Wu does show a naming convention in his Fig. 5, Zamir's Fig. 2 is a diagram, not a name or naming convention. That is, Zamir's Fig. 2 is a pictorial representation of many names (i.e. a relational tree between many clusters). Wu's cluster names can be generated using Zamir's diagram by listing all clusters traversed from a starting point at the top of Zamir's diagram down to a specific node (i.e. cluster) with a slash "/" inserted between traversed cluster nodes.

But the teachings of Wu's Fig. 5 and Zamir's Fig. 2 are not different naming formats. If one were to integrate Wu's naming convention to Zamir's diagram, one would end up with a Zamir's diagram with the name of each node following Wu's naming convention. That is, the name at each node would follow the Wu's naming format, i.e. a listing of all traversed clusters from most general to more specific. In essence, the name of each node when traversing down Zamir's diagram would grow since each would include the names of all nodes above it. Thus, the combination of Wu and Zamir does not result in two naming conventions, but rather results in a relational diagram with each node level having successfully longer names.

Furthermore, even if one were to view Wu's listing convention and Zamir's diagram as two separate naming formats, one would still not achieve the present invention since there is no teaching explaining how a selection is made between the two naming formats when creating a newly combined cluster. That is, how should one determined which of the two naming formats to used when naming a new combination of clusters? None of the cited prior art, singularly or in combination, teach that a selection between naming conventions is made for each specific combination of clusters based on the degree of similarity between the combined clusters. That is, after combining two clusters to form a new combination of clusters, which of the two naming formats (Wu's or Zamir's) should be used to name the newly created cluster combination? In the present invention, the decision between naming formats is determined by a measure of similarity between the combined clusters, but there is no such teaching in the

cited prior art. Furthermore, applicants reiterate that Zamir's Fig. 2 shows a diagram, and does not show a naming format, or naming convention.
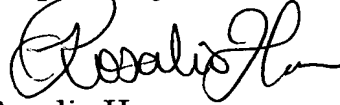
To summarize, claims 7, 11, and 13 requires that after two clusters are determined to be sufficiently similar to be combined (i.e. they have a degree of similarity higher than a first predetermined value), the type (i.e. format) of name given the resultant cluster combination depends on the degree of similarity between its two constituent clusters. If the degree of similarity is less than a second predetermined value (higher than the first predetermined value), then the assigned name has a first naming convention (specifically, an OR-type naming convention), else if the degree of similarity is higher than the second predetermined value, then the assigned name has a second naming convention (specifically, an AND-type naming convention), different from the first naming convention. In this manner, by simply looking at the type of name given a cluster combination, one can readily determine from the name format (i.e. naming convention) whether the combined clusters have a very high degree of similarity (an AND-type naming convention, and consequently a degree of similarity higher than the second predetermined value), or do not have a very high degree of similarity (an OR-type naming convention, and consequently a degree of similarity lower than the second predetermined value). For example, if the first predetermined value is representative of an 80% level of similarity and the second predetermined value is representative of an 95% level of similarity, then one can easily determined by looking at the name of a cluster combination if its constituent clusters have a degree of similarity higher or lower than 95%. This type of specific similarity determination is not possible with either Wu's or Zamir's teachings. The more naming conventions one uses with assigned predetermined values of similarity, the easier it is for one to quickly identify the cluster combinations that have a degrees of similarity higher than a desired specific value.

New claims 24-30 make it clear that the present invention defines multiple naming conventions, each being indicative of a degree of relation between combined clusters, and selects one of the multiple naming conventions to name a newly created cluster combination based on the degree of similarity

between the combined constituent clusters. The new claims also explain how the naming convention is modified when merging a single cluster into a pre-existing cluster combination, and how the naming convention is modified when merging two pre-existing cluster combinations. Presently, two main naming conventions (AND and OR) are taught, along with the use of parenthesis to separate different parts of a name. Using the present invention, it is possible to construct a final name that is a combination of AND-type and OR-type sub-names, with each sub-name enclosed in parenthesis. In this case, it is possible to determine not only the similarity between constituent clusters within a cluster combination, but also to discern the similarity between a specific constituent cluster and a group of other constituent clusters enclosed in parenthesis. Support for these features is found at least in page 30, line 1 to page 33, line 10 (and particularly in page 32, line 27 to page 33, line 6) of the Specification section of present patent application.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration of the present application.

Respectfully submitted,

Rosalio Haro
Registration No. 42,633

Please address all correspondence to:

Epson Research and Development, Inc.
Intellectual Property Department
150 River Oaks Parkway, Suite 225
San Jose, CA 95134
Phone: (408) 952-6000
Facsimile: (408) 954-9058
Customer No. 20178

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